CLAIMS

What is claimed is:

1. An apparatus, comprising:

an adhesion layer abutting a conductive pad;

a molybdenum-containing barrier layer abutting said adhesion layer;

a wetting layer abutting said molybdenum-containing barrier layer; and

high tin content solder material abutting said wetting layer.

2. The apparatus of claim 1, wherein said molybdenum-containing barrier layer comprises a material containing at least about 90% (atomic) molybdenum.

3. The apparatus of claim 1, wherein said high tin content solder material comprises a material containing at least about 90% (by weight) tin.

4. The apparatus of claim 1, further comprising said conductive pad abutting at least one layer of low k dielectric material.

5. The apparatus of claim 4, wherein said at least one layer of low-k dielectric material comprises at least one layer of carbon doped oxide.

6. The apparatus of claim 1, wherein said wetting layer is substantially subsumed in said high tin content solder material forming an intermetallic compound layer.

7. A method comprising:

providing at least one interlayer dielectric having at least one abutting conductive pad;

forming an adhesion layer on at least a portion of said at least one conductive pad;

forming a molybdenum-containing barrier layer on at least a portion of said adhesion layer;

forming a wetting layer on at least a portion of said molybdenum-containing barrier layer; and

forming a high tin content solder plug on at least a portion of said wetting layer.

8. The method of claim 7, wherein forming said molybdenum-containing barrier layer comprises forming a molybdenum-containing barrier layer containing at least about 90% (atomic) molybdenum.

9. The method of claim 7, wherein forming said high tin content solder plug comprises a high tin content solder plug containing at least about 90% (by weight) tin.

10. The method of claim 7, further comprising said conductive pad abutting at least one layer of low k dielectric material.

11. The method of claim 7, wherein providing at least one interlayer dielectric comprises providing at least one layer of carbon doped oxide.

12. The method of claim 7, further comprising reflowing said high tin content solder plug to from a solder bump.

13. The method of claim 12, wherein said wetting layer is substantially subsumed into said high tin content solder bump during said reflow.

14. The method of claim 7, wherein forming said molybdenum-containing barrier layer comprises sputter depositing a molybdenum-containing material.

15. An electronic system, comprising:

an external substrate within a housing; and

at least one microelectronic device package attached to said external substrate, having at least one under bump metallization layer including:

an adhesion layer abutting a conductive pad;

a molybdenum-containing barrier layer abutting said adhesion layer;

a wetting layer abutting said molybdenum-containing barrier layer; and

high tin content solder material abutting said wetting layer; and

an input device interfaced with said external substrate; and

a display device interfaced with said external substrate.

16. The system of claim 15, wherein said molybdenum-containing barrier layer comprises a material containing at least about 90% (atomic) molybdenum.

17. The system of claim 15, wherein said high tin content solder material comprises a material containing at least about 90% (by weight) tin.

18. The system of claim 15, further comprising said conductive pad abutting at least one layer of low k dielectric material.

19. The system of claim 18, wherein said at least one layer of low-k dielectric material comprises at least one layer of carbon doped oxide.

20. The system of claim 15, wherein said wetting layer is substantially subsumed in said high tin content solder material forming an intermetallic compound layer.